

CLAIMS:

1. A method of measurement of an evoked neural response comprising the steps of:
 - 5 obtaining a sensed signal representing the evoked neural response from a sensor; passing the obtained sensed signal to a signal input of a high gain amplifier; and altering a reference voltage of the high gain amplifier in order to prevent the high gain amplifier saturating with variations of the sensed signal.
- 10 2. A method according to claim 1 wherein the step of altering the reference voltage is performed during the measurement of the evoked neural response.
3. A method according to claim 1 or claim 2 wherein the step of altering the reference voltage is performed by setting the reference voltage equal to a present value
 - 15 of the sensed signal.
4. A method according to claim 3 wherein the setting of the reference voltage equal to a present value of the sensed signal is undertaken by a sample-and-hold circuit having an input from the sensed signal.
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5. A method according to claim 3 or claim 4 further comprising the step of setting the reference voltage of the high gain amplifier equal to the present value of the sensed signal at the commencement of every sample period.
- 25 6. A method according to claim 6 further comprising the step of integrating samples derived at the output of the high gain amplifier to obtain a continuous waveform representing the amplified sensed signal.
7. A method according to any one of claims 1 to 6 wherein the step of obtaining
 - 30 the sensed signal comprises obtaining a sensed signal of the neural response of an auditory nerve.
8. A method according to claim 7 wherein the step of obtaining the sensed signal of the neural response of the auditory nerve uses one or more electrodes of an electrode
 - 35 array of a cochlear implant.

9. A device for measuring an evoked neural response, the device comprising:
a sensor for obtaining a sensed signal representing the evoked neural response;
a high gain amplifier having a signal input for receiving the sensed signal, and
having a reference input; and
- 5 means for altering a reference voltage at the reference input of the high gain amplifier in order to prevent the high gain amplifier saturating with variations of the sensed signal.
10. A device according to claim 9 wherein the reference voltage is altered during the
- 10 measurement of the evoked neural response.
11. A device according to claim 10 wherein the reference voltage is altered by setting the reference voltage equal to a present value of the sensed signal.
- 15 12. A device according to claim 11 further comprising a sample-and-hold circuit having an input from the sensed signal, said sample-and-hold circuit setting of the reference voltage equal to a present value of the sensed signal.
13. A device according to claim 12 wherein the reference voltage of the high gain
- 20 amplifier is set equal to the present value of the sensed signal at the commencement of every sample period.
14. A device according to claim 13 wherein samples derived at the output of the high gain amplifier are integrated to obtain a continuous waveform representing the
- 25 amplified sensed signal.
15. A device according to any one of claims 9 to 14 wherein the obtained sensed signal is of the neural response of an auditory nerve.
- 30 16. A device according to claim 15 wherein the sensor comprising one or more electrodes of an electrode array of an implanted portion of a cochlear implant for obtaining the sensed signal.
17. A device according to any one of claims 9 to 16 comprising a cochlear implant.

18. A method of measurement of an evoked neural response comprising the steps of:
- obtaining a sensed signal representing the evoked neural response from a sensor;
 - passing the obtained sensed signal to a signal input of a high gain amplifier; and
 - 5 setting a reference voltage of the high gain amplifier equal to a present value of the sensed signal in order to prevent the high gain amplifier saturating with variations of the sensed signal.
19. A device for measuring an evoked neural response, the device comprising:
- 10 a sensor for obtaining a sensed signal representing the evoked neural response;
 - a high gain amplifier having a signal input for receiving the sensed signal, and having a reference input; and
 - means for setting a reference voltage at the reference input of the high gain amplifier equal to a present value of the sensed signal in order to prevent the high gain
 - 15 amplifier saturating with variations of the sensed signal.